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The amended and new claims find support throughout the specification including, for example, the following sections:

Claims 1 and 40: at page 12, lines 11-18, page 23, lines 3-5; and page 28, lines 26-29.

Claims 3, 19 and 21: original claims 3, 19 and 21; page 18, lines 3-17; page 21, lines 18-32; and page 27, lines 15-21.

II. Rejection of Claims under 35 U.S.C. 102(e)

Claims 1-10, 13, 16-24 and 40-43 are said to be anticipated by U.S. Patent 6,306,610 to Bawendi et al. (Bawendi). For the reasons that follow, Applicants respectfully disagree.

The currently claimed invention as set forth in independent claims 1 and 40 are directed to methods utilizing an array in which a plurality of antiligands are immobilized on a support at distinct and *spatially encoded* locations. With such an arrangement, the identity of a ligand in a sample can be detected and identified on the basis of the location at which it binds on the array. This is true even in certain methods when more than one ligand is detected (see, e.g., claims 3, 19 and 21).

The methods discussed in Bawendi, in contrast, do not discuss methods utilizing arrays that are spatially encoded. Nor does Bawendi discuss array-based methods in which ligands that bind to antiligands on an array are detected and identified on the basis of a spatial encoding strategy. Instead, any discussion in Bawendi regarding encoding strategies is limited to differential labeling approaches, in which different ligands are labeled with different semiconductor nanocrystals, with ligand identity determined on the basis of the particular signal detected rather than the location at which it binds on the array (see, e.g., col. 22, line 65 to col. 23, line 1).

Thus, for this reason alone, Bawendi fails to teach or suggest each and every element of independent claims 1 and 40 as required for an anticipation rejection. Accordingly, Applicants respectfully submit that the rejection of these claims, as well as the other claims that depend upon these two claims, be withdrawn.

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III. Double Patenting Rejections

Claims 1-10, 16-26 and 40-43 are rejected under obviousness-type double patenting over claims 1-40 of U.S. Patent No. 6,274,323 in view of U.S. Patent No. 5,606,789 to Koster. As indicated in the previous response, Applicants will submit a terminal disclaimer to overcome this rejection upon notification of allowable subject matter.

Various other claims are provisionally rejected under obviousness type double patenting over various claims in U.S. Application Nos. 09/784,866; 09/766,273; 09/882,193; and 09/887,914. Because these are provisional double patenting rejections, Applicants again request that this rejection be held in abeyance pending notification of allowable subject matter.

IV. Marked Up Version

Appendix A that is attached provides a "Version with Markings to Show Changes Made." Appendix B that is attached provides a list of all pending claims upon entry of this amendment.

If the Examiner believes a telephone conference would aid in the prosecution of

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this case in any way, please call the undersigned at 303-571-4000.

Respectfully submitted,



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APPENDIX A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The following claims have been amended as indicated without prejudice or disclaimer:

1. (Twice amended) An analytical method ~~of detecting a ligand of interest in a sample~~, comprising:

(a) providing a first plurality of antiligands immobilized on a solid support at positionally distinct and spatially encoded locations thereon to provide a first array, wherein the plurality of antiligands comprises a first antiligand capable of binding specifically to a first ligand ~~of interest~~;

(b) contacting the array with a sample containing or suspected of containing the first ligand, wherein the first ligand is linked through a linker to a first semiconductor nanocrystal before, during or after the contacting, under conditions in which the first ligand, if present, binds specifically to the first antiligand to form a first complex;

(c) optionally, removing unbound ligand from the array; and

(d) identifying the location of the first complex by detecting and, optionally, quantifying the presence in the first complex of the first semiconductor nanocrystal, whereby detection of the first semiconductor nanocrystal and the location at which it binds indicating indicates the presence and the identity of the first ligand-of-interest.

3. (Twice amended) The method of claim 1, wherein

the sample contains a second ligand linked to a second semiconductor nanocrystal which is optionally detectably distinct from the first semiconductor nanocrystal, wherein the second ligand is capable of binding specifically to a second immobilized antiligand to form a second complex; and

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identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals, whereby the location or locations at which the first and second semiconductor nanocrystals bind indicates the identity of the first and second ligand, and the first and second ligands are optionally distinguished according to a signal that is distinct for each of the first and second semiconductor nanocrystals.

19. (Twice amended) The method of claim 16, wherein
the sample contains a second ligand linked to a ~~detectably distinct~~ second semiconductor nanocrystal that is capable of binding specifically to a second immobilized antiligand to form a second complex and optionally detectably distinct from the first semiconductor nanocrystal; and

identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals, whereby the location or locations at which the first and second semiconductor nanocrystals bind indicates the identity of the first and second ligand, and binding of the first and second ligands is optionally distinguished according to a signal that is distinct for each of the first and second semiconductor nanocrystals.

21. (Twice amended) The method of claim 20, wherein
the sample contains a second ligand linked to a ~~detectably distinct~~ second semiconductor nanocrystal that is capable of binding specifically to a second immobilized antiligand to form a second complex and optionally detectably distinct from the first semiconductor nanocrystal; and

identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals, whereby the location or locations

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at which the first and second semiconductor nanocrystals bind indicates the identity of the first and second ligand, and binding of the first and second ligands is optionally distinguished according to a signal that is distinct for each of the first and second semiconductor nanocrystals.

40. (Twice amended) An analytical method, comprising:

(a) providing a first plurality of antiligands immobilized on a solid support at positionally distinct and spatially encoded locations thereon to provide an array, wherein the plurality comprises a first antiligand that is a binding partner of a first ligand;

(b) contacting the first array with a sample containing or suspected of containing the first ligand, whereby the first ligand, if present, and the first antiligand interact to form a first complex;

(c) labeling the first ligand in the first complex with a first semiconductor nanocrystal; and

(d) identifying which location of the array includes the first complex by detecting the presence therein of the first semiconductor nanocrystal, whereby detection of the first semiconductor nanocrystal and the location at which it binds indicating indicates the presence and the identity of the first ligand.

41. (Twice amended) The method of claim 40, wherein:

the first plurality of antiligands comprises a second antiligand that is a binding partner of a second ligand;

the sample contains or is suspected of containing the second ligand, whereby the second ligand, if present, and the second antiligand interact to form a second complex;

step (c) comprises labeling the second ligand in the second complex with a second semiconductor nanocrystal that is optionally detectably distinct from the first semiconductor nanocrystal; and

step (d) comprises determining which location or locations of the array include the first complex, the second complex or both the first and second complexes by detecting the presence therein of the first and second semiconductor nanocrystals, whereby the location or locations at which the first and second semiconductor nanocrystals bind indicates the identity of

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the first and second ligand, and binding of the first and second ligands is optionally distinguished according to a signal that is distinct for each of the first and second semiconductor nanocrystals.